

Abstract of the Disclosure

5 An improved structure and method are provided to *decouple* the gate dielectric thickness and the emitter tip to gate layer distance by etching the dielectric using ion bombardment. The ion bombardment, or ion etch, is performed prior to depositing the gate layer. The improved structure and method will allow a smaller distance between the emitter tip and the gate structure without having to decrease the thickness of the gate insulator layer. The smaller emitter tip to gate distance lowers the turn-on voltage which is highly desirable in such areas as beam optics and power dissipation.

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